CITY OF WOBURN
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2007

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Report Summary:

Highlights	**January 1, 2005**	**January 1, 2007**
Contributions		
Funding Schedule FY 2008	$4,259,000	$4,259,000
Funding Schedule FY 2009	4,340,000	4,369,054
Funded Ratios		
GAS No. 25	72.8%	77.3%
Participants		
Actives	534	580
Retirees and Beneficiaries	364	365
Vested	0	0
Inactives	106	87
Disabled	40	40
Total	1,044	1,072
Payroll		
Payroll of Active Members	$22,623,505	$24,258,365
Average Payroll	42,366	41,825
Normal Cost		
Employer	983,171	841,329
Employee	1,762,802	1,929,714
Administrative Expenses	375,000	425,000
Total	3,120,973	3,196,043
Actuarial Accrued Liabilities		
Actives	63,295,250	70,907,179
Retirees, Beneficiaries, Disabilities and Inactives	56,733,598	61,526,054
Total	120,595,047	132,433,233
Actuarial Value of Assets	87,818,045	102,354,232
Unfunded Actuarial Accrued Liabilities	$32,777,002	$30,079,001

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2007, of Woburn Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2007.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Woburn Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2007.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability decreased by 4.2% to $30,079,001. The decrease is the result of net favorable actuarial experience during the preceding year. The actuarial value of assets for 2005 and 2006 had an average return of 13.5%. The sources of the (gain)/loss are as follows:

Investment	(5,076,838)
Salary Gain	(1,458,400)
New Entrants	1,356,260
Active Decrements (Retirement)	1,920,667
Active Decrements (Termination)	322,486
Active Decrements (Death)	549,974
Active Decrements (Disability)	16,655
Inactive (Mortality and data adjustments	(1,934,142)
Other (Data corrections, Section 3(8)(c), buybacks, etc.)	1,728,156
Total (gain)/loss	(2,575,182)

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2005	January 1, 2007
Superannuation	$1,860,425	$1,859,813
Termination	250,799	256,592
Death	148,967	155,626
Disability	485,782	499,012
Administrative Expenses	375,000	425,000
Total Normal Cost	3,120,973	3,196,043
% of Pay	13.8%	13.2%
Employee Contributions	1,762,802	1,929,714
% of Pay	7.8%	8.0%
Employer Normal Cost	$1,358,171	$1,266,329
% of Pay	6.0%	5.2%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2005	January 1, 2007
Actives		
Superannuations	$55,445,542	$62,349,452
Termination	850,665	1,006,561
Death	1,980,268	2,226,656
Disability	5,018,775	5,324,510
Retirees and Inactives		
Retirees and Beneficiaries	48,181,506	50,736,135
Vested	0	0
Terminated (Refund)	566,199	432,891
Disabled	8,552,092	10,357,028
Total	$120,595,047	$132,433,233

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2005	January 1, 2007
Actives		
Superannuation	$70,756,078	$77,829,740
Termination	1,821,071	1,997,648
Death	3,118,236	3,414,155
Disability	9,266,365	9,766,115
Retirees and Inactives		
Retirees and Beneficiaries	48,181,506	50,736,135
Vested	0	0
Terminated (Refund)	566,199	432,891
Disabled	8,552,092	10,357,028
Total	$142,261,547	$154,533,712

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Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2005	January 1, 2007
Cash equivalents	$2,032,641	$2,064,497
Short term investments	200,000	205,257
Fixed income securities	31,757,745	25,874,171
Equities	38,733,432	41,868,585
International	3,782,959	11,704,160
Real Estate	2,164,514	5,076,223
Venture Capital	0	0
Other	8,083,123	15,408,310
Accounts receivable	906,970	173,635
Accounts payable	(6,626)	(187,622)
Accrued income	163,288	167,015
Total Market Value	$87,818,045	$102,354,232
Total Actuarial Value	$87,818,045	$102,354,232

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table V

	January 1, 2005	January 1, 2007
Actuarial Accrued Liability	$120,595,047	$132,433,233
Actuarial Assets	87,818,045	102,354,232
Unfunded Actuarial Accrued Liability	$32,777,002	$30,079,001
Funded Status	72.8%	77.3%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2022
  $ 27,274,410 over 15 years with 4.0% increasing payments
- Level amortization of the Early Retirement Incentive by June 30, 2008
  $ 46,070 over 1 years
- Increasing amortization of the current (gains)/losses by June 30, 2022
  $ -2,575,182 over 15 years with 4.0% increasing payments
- Interest adjustment for payments contributed monthly over fiscal year.

The pension appropriation is shown in Table VII.

Table VI

	January 1, 2005	January 1, 2007
Normal cost	$1,358,171	$1,266,329
Amortization payment of the prior accrued liability	2,012,911	2,336,894
Amortization payment of 1992 ERI liability	44,484	46,070
Amortization payment of current (gains)/losses	0	0
Total cost	$3,415,566	$3,649,293
% of Pay	15.1%	15.0%
Fiscal 2008 cost	$4,259,000	$4,259,000
Fiscal 2009 cost	$4,340,000	$4,369,054

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 15 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 17.2% of payroll, decreasing to 13.4% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 2.9% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2008	$24,258,365	$1,929,714	$1,362,923	$2,896,077	$4,259,000	17.6	77.3
2009	$25,349,991	$2,048,811	$1,389,534	$2,979,520	$4,369,054	17.2	78.6
2010	$26,490,741	$2,174,719	$1,415,780	$3,084,266	$4,500,046	17.0	80.0
2011	$27,682,824	$2,307,810	$1,441,574	$3,193,201	$4,634,775	16.7	81.3
2012	$28,928,551	$2,448,475	$1,466,823	$3,306,494	$4,773,317	16.5	82.6
2013	$30,230,336	$2,597,127	$1,491,425	$3,424,318	$4,915,743	16.3	84.0
2014	$31,590,701	$2,754,200	$1,515,270	$3,546,855	$5,062,125	16.0	85.4
2015	$33,012,283	$2,920,150	$1,538,242	$3,674,294	$5,212,536	15.8	86.8
2016	$34,497,836	$3,095,458	$1,560,213	$3,806,830	$5,367,043	15.6	88.2
2017	$36,050,238	$3,280,630	$1,581,047	$3,944,668	$5,525,715	15.3	89.8
2018	$37,672,499	$3,476,200	$1,600,596	$4,088,019	$5,688,615	15.1	91.4
2019	$39,367,762	$3,682,727	$1,618,702	$4,237,104	$5,855,806	14.9	93.0
2020	$41,139,311	$3,900,803	$1,635,197	$4,111,078	$5,746,275	14.0	94.8
2021	$42,990,580	$4,131,048	$1,649,899	$4,192,517	$5,842,416	13.6	96.4
2022	$44,925,156	$4,374,116	$1,662,613	$4,360,218	$6,022,831	13.4	98.2
2023	$46,946,788	$4,630,695	$1,673,130	$0	$1,673,130	3.6	100.0
2024	$49,059,393	$4,901,508	$1,681,226	$0	$1,681,226	3.4	100.0
2025	$51,267,066	$5,187,318	$1,686,664	$0	$1,686,664	3.3	100.0
2026	$53,574,084	$5,488,924	$1,689,186	$0	$1,689,186	3.2	100.0
2027	$55,984,918	$5,807,171	$1,688,519	$0	$1,688,519	3.0	100.0
2028	$58,504,239	$6,142,945	$1,684,372	$0	$1,684,372	2.9	100.0
2029	$61,136,930	$6,419,378	$1,760,169	$0	$1,760,169	2.9	100.0
2030	$63,888,092	$6,708,250	$1,839,377	$0	$1,839,377	2.9	100.0
2031	$66,763,056	$7,010,121	$1,922,149	$0	$1,922,149	2.9	100.0
2032	$69,767,393	$7,325,576	$2,008,645	$0	$2,008,645	2.9	100.0
2033	$72,906,926	$7,655,227	$2,099,034	$0	$2,099,034	2.9	100.0
2034	$76,187,738	$7,999,712	$2,193,491	$0	$2,193,491	2.9	100.0
2035	$79,616,186	$8,359,700	$2,292,198	$0	$2,292,198	2.9	100.0
2036	$83,198,914	$8,735,886	$2,395,347	$0	$2,395,347	2.9	100.0
2037	$86,942,865	$9,129,001	$2,503,137	$0	$2,503,137	2.9	100.0
2038	$90,855,294	$9,539,806	$2,615,779	$0	$2,615,779	2.9	100.0
2039	$94,943,783	$9,969,097	$2,733,489	$0	$2,733,489	2.9	100.0

* Calendar basis

** Beginning of Fiscal Year

GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VII

		January 1, 2005	January 1, 2007
(1)	Actuarial Accrued Liability	$120,595,047	$132,433,233
(2)	Actuarial Value of Assets	87,818,045	102,354,232
(3)	Unfunded Actuarial Accrued Liability	32,777,002	30,079,001
(4)	Funded Ratio (2)/(1)	72.8%	77.3%
(5)	Covered Payroll	$22,623,505	$24,258,365
(6)	UAAL as a percentage of payroll: (3)/(5)	144.9%	124.0%
(7)	Annual Required Contribution (ARC)	$4,150,000	$4,259,000
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2007.

The normal cost for employees on that date was:	$1,929,714	8.0% of pay
The normal cost for the employer was:	841,329	3.5% of pay

The actuarial liability for active members was:	$70,907,179
The actuarial liability for retired and inactive members was:	61,526,054
Total actuarial accrued liability:	132,433,233
System assets as of that date:	102,354,232
Unfunded actuarial accrued liability:	$30,079,001

The ratio of system's assets to total actuarial liability was 77.3%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.0%
Rate of Salary Increase:	4.75%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/07	$102,354,232	$132,433,233	$30,079,001	77.3%	$24,258,365	124.0%
01/01/05	87,818,592	120,595,047	32,776,455	72.8%	22,623,505	144.9%
01/01/00	75,960,104	88,762,762	12,802,658	85.6%	17,183,350	74.5%
01/01/99	66,860,613	85,472,346	18,611,733	78.2%	16,269,482	114.4%
01/01/98	55,481,151	78,260,821	22,779,670	70.9%	15,426,806	147.7%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2007

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	7	0	0	0	0	0	0	0	0	7
	19,732	0	0	0	0	0	0	0	0	19,732
25-29	14	1	0	0	0	0	0	0	0	15
	32,389	53,711	0	0	0	0	0	0	0	33,811
30-34	17	16	0	0	0	0	0	0	0	33
	34,964	46,788	0	0	0	0	0	0	0	40,697
35-39	16	18	11	1	0	0	0	0	0	46
	27,809	50,084	50,791	44,993	0	0	0	0	0	42,395
40-44	28	12	12	12	2	0	0	0	0	66
	28,309	36,570	63,087	64,915	58,089	0	0	0	0	43,692
45-49	51	38	7	21	14	1	0	0	0	132
	21,821	30,206	61,389	61,335	68,712	73,165	0	0	0	37,982
50-54	37	21	7	19	7	18	6	0	0	115
	22,919	29,129	30,903	48,908	54,735	79,014	72,786	0	0	42,152
55-59	20	15	6	11	6	13	15	7	1	94
	24,585	36,580	48,522	35,480	52,090	67,132	72,170	60,629	84,202	47,853
60-64	7	9	3	5	2	3	5	8	0	42
	28,734	39,780	17,928	36,907	58,918	48,786	76,993	72,909	0	48,331
65-69	3	4	0	7	1	2	1	1	0	19
	10,776	38,493	0	48,235	37,120	42,252	64,971	40,174	0	39,511
70+	2	3	0	2	0	1	1	1	1	11
	3,750	20,605	0	28,210	0	38,769	48,473	41,982	41,424	26,944
Total Employees	202	137	46	78	32	38	28	17	2	580
Average Salary	25,332	36,677	50,146	51,412	60,275	69,415	72,060	64,108	62,813	41,825

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Retiree Distribution as of January 1, 2007

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	2	4	6	15,698	71,584	87,281
50-54	1	2	3	53,916	60,220	114,136
55-59	16	5	21	555,066	34,602	589,668
60-64	17	20	37	597,748	252,003	849,751
65-69	16	18	34	457,512	268,790	726,302
70-74	32	39	71	650,217	451,104	1,101,322
75-79	36	36	72	696,035	456,675	1,152,710
80-84	20	37	57	284,077	347,912	631,989
85-89	12	32	44	157,577	183,040	340,617
90-94	5	11	16	29,038	84,523	113,561
95-99	0	4	4	0	12,787	12,787
Total	157	208	365	3,496,883	2,223,240	5,720,123
Average (Age/Payment)	73.1	76.5	75	22,273	10,689	15,672
Frequency Percent	43	57	100	61.1	38.9	100

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Disabled Retiree Distribution as of January 1, 2007

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	40,074	0	40,074
40-44	2	0	2	34,175	0	34,175
45-49	4	0	4	117,906	0	117,906
50-54	0	0	0	0	0	0
55-59	12	0	12	398,847	0	398,847
60-64	1	0	1	33,487	0	33,487
65-69	2	0	2	60,722	0	60,722
70-74	3	0	3	87,207	0	87,207
75-79	6	0	6	84,423	0	84,423
80-84	6	2	8	104,499	18,493	122,992
85-89	0	0	0	0	0	0
90-94	0	1	1	0	10,382	10,382
95-99	0	0	0	0	0	0
Total	37	3	40	961,341	28,875	990,216
Average (Age/Payment)	64.4	86.1	66	25,982	9,625	24,755
Frequency Percent	92.5	7.5	100	97.1	2.9	100

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EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2007	$7,351,106	$1,929,714	$4,259,000	$7,639,698	$6,477,307
2008	7,867,888	2,048,811	4,369,054	8,094,329	6,644,307
2009	8,455,049	2,174,719	4,500,046	8,591,665	6,811,381
2010	9,023,223	2,307,810	4,634,775	9,102,723	7,022,085
2011	9,649,079	2,448,475	4,773,317	9,627,974	7,200,686
2012	10,199,393	2,597,127	4,915,743	10,170,063	7,483,539
2013	10,777,771	2,754,200	5,062,125	10,733,253	7,771,808
2014	11,293,680	2,920,150	5,212,536	11,321,516	8,160,522
2015	11,844,588	3,095,458	5,367,043	11,939,049	8,556,962
2016	12,396,883	3,280,630	5,525,715	12,587,776	8,997,237
2017	12,974,931	3,476,200	5,688,615	13,270,233	9,460,117
2018	13,579,932	3,682,727	5,855,806	13,988,168	9,946,769
2019	14,213,143	3,900,803	5,746,275	14,742,444	10,176,379
2020	14,875,880	4,131,048	5,842,416	15,514,101	10,611,685
2021	15,569,520	4,374,116	6,022,831	16,319,103	11,146,530
2022	16,295,503	4,630,695	1,673,130	17,154,389	7,162,711
2023	17,055,337	4,901,508	1,681,226	17,679,318	7,206,715
2024	17,850,601	5,187,318	1,686,664	18,205,767	7,229,148
2025	18,682,948	5,488,924	1,689,186	18,731,931	7,227,094
2026	19,554,105	5,807,171	1,688,519	19,255,765	7,197,350
2027	20,465,883	6,142,945	1,684,372	19,774,962	7,136,396
2028	21,420,175	6,419,378	1,760,169	20,280,999	7,040,370
2029	22,418,965	6,708,250	1,839,377	20,776,373	6,905,034
2030	23,464,327	7,010,121	1,922,149	21,257,803	6,725,746
2031	24,558,433	7,325,576	2,008,645	21,721,631	6,497,419
2032	25,703,555	7,655,227	2,099,034	22,163,781	6,214,487
2033	26,902,073	7,999,712	2,193,491	22,579,730	5,870,860
2034	28,156,475	8,359,700	2,292,198	22,964,457	5,459,880
2035	29,469,368	8,735,886	2,395,347	23,312,404	4,974,268
2036	30,458,467	9,129,001	2,503,137	23,632,524	4,806,195

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2007, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	**Member Contribution Rate**
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. <u>Deferred Vested Retirement</u>

a. <u>Eligibility</u>:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. <u>Benefit Amount</u>:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. <u>Refund of Contributions</u>:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. <u>Accidental Disability</u>

a. <u>Eligibility</u>:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. <u>Benefit Amount</u>:

The accidental disability amount is 72% of annual salary plus $648.48 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2007.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. Salary Scale

The assumed annual rates for salary increases including longevity are illustrated by the following rates:

Year	Rate
2007	3.00%
2008	3.00%
2009	3.50%
2010	3.50%
2011	4.00%
2012	4.00%
2013+	4.75%

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is equal to the market value.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2007 is $425,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Woburn Retirement System contributing as of January 1, 2007, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

July 2007

BREAKOUTS

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Breakouts

	Total	**All Others**	**Housing**
(1) Participants			
(a) Actives	580	564	16
(b) Inactives	87	87	0
(c) Retirees	365	357	8
(d) Disabled Retirees	40	40	0
(e) Total	40	1048	24
(2) Payroll of Active Participants	$24,258,365	$23,387,377	$870,988
(3) Percentage of Payroll	100.00%	96.41%	3.59%
(4) Normal Cost			
(a) ERI	396,341	374,157	22,184
(b) Remaining Amortizations	2,718,273	2,620,674	97,599
(c) Employer Normal Cost	841,329	831,884	9,445
(d) Administrative Expenses	425,000	409,741	15,259
(e) Total Appropriation	4,380,943	4,236,456	144,487
(5) Fiscal 2008 Cost	$4,259,000	4,103,492	$155,509
(6) Fiscal 2009 Cost	$4,369,054	4,209,527	$159,527
(7) Percentage of Total Cost	100.00%	96.70%	3.30%

Appropriations are allocated based on Normal Cost and ERI elections of unit. Amortization of the unfunded liability is based on unit payroll.